



Perspective

Addressing the needs of individuals experiencing homelessness: An epidemiological perspective

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Abstract

This paper emphasizes the significance of employing advanced epidemiological perspectives to address homelessness as a critical public health concern. Findings emphasize the crucial role of epidemiological approaches in comprehensively understanding the complexity of homelessness. It highlights the assessment of prevalence, identification of critical risk factors, and the utilization of diverse study designs to explore this complex public health issue. Leveraging epidemiologic data can enhance the effectiveness of interventions aimed at improving the health outcomes of individuals experiencing homelessness.

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Introduction

Homelessness remains a highly complex and ever-evolving condition and a significant challenge and burden to public health. The number of individuals experiencing homelessness has steadily risen over the past four years, with a 2.2% increase between 2019 and 2022. As of January 2022, about 582 500 individuals were experiencing homelessness in the United States on any given single night.¹ While the formal definition of homelessness varies, the most common definition used by researchers capture individuals or families lacking a fixed, regular, and adequate nighttime residence.¹ Homelessness also includes individuals living outside, in shelters, encampments, transitional housing, and individuals in persistent poverty facing constant housing insecurity.¹ While 60% percent of the homeless population seek refuge in sheltered locations, the remainder—about 233 000 people—stay in unsheltered locations like streets, parks, abandoned buildings, or other places not suitable for human habitation.¹ Many people also endure prolonged periods of homelessness, lasting a year or more.

The U.S. Department of Housing and Urban Development (HUD) defines chronically homelessness individuals as those with a disability who have been continuously homeless for one year or more, or have experienced at least four episodes of homelessness in the last three years, totaling at least 12 months of homelessness.¹ Homelessness continues to present a public health crisis that stands to gain from enhanced

epidemiological approaches. Epidemiologists, through their study of the distribution (incidence and prevalence) and determinants (risk factors) of diseases, play a crucial role in understanding and improving solutions to public health challenges.² Their efforts contribute to the development of effective interventions and policies. The integration of epidemiological methods can enhance the field of homelessness research in several ways.

Counting the homeless

Epidemiologists analyze the number of individuals in a given population at a specific point in time. This process can generate estimates of the overall magnitude of homelessness. In an effort to quantify the number of persons experiencing homelessness, HUD developed an annual single point-in-time (PIT) counting system across the United States.¹ While statistics that capture the number of individuals experiencing homelessness exist, precise quantification is challenging due to the mobile nature of persons facing homelessness, diverse definitions of homelessness, and the cyclical nature of the condition. Some approaches that have been used to count the homeless include surveys of housed individuals regarding past homelessness, direct counting involving contact with each homeless person (e.g., in a single night), and data matching to track individuals experiencing homelessness at multiple data collection points, thus accounting for the highly mobile nature of the population. Data system interoperability such as integrating systems like the



Homeless Management Information System (HMIS) with other health data systems, such as immunization registries, can significantly enhance the capacity to track health service utilization and health outcomes in this population.³ For example, using algorithms that flag individuals providing homeless service site addresses, has been a promising innovation to improve identification and ensure timely interventions.⁴

It is important to enhance the accuracy and methodology of counting homeless individuals in order to provide effective services. Epidemiologic approaches can aid in identifying communities with the greatest need. Homelessness also varies uniquely by subpopulations, including families, the elderly, veterans, youth, and individuals with specific vulnerabilities such as disability or addiction. The study by Byrne and colleagues provides a novel approach for identifying homelessness using integrated administrative data.⁵ These rely on data from homeless services and shelters to track individuals over time, and data linkage to information from healthcare, housing, and criminal justice systems. These data integration efforts have shown promise in identifying individuals who may not traditionally appear in PIT counts, thereby providing a more comprehensive picture of homelessness.

Determining risk factors of greatest concern

Several studies have reported that individuals experiencing homelessness have higher rates of morbidity and mortality than the general population.⁶ The root causes of homelessness are complex, shaped by a dynamic interplay of individual-level risk factors and structural influences. The unique vulnerabilities of individuals facing homelessness entails primary individual risk factors, including family conflict, victimization, sexual and gender minority identity, and a history of involvement with the child welfare system. Individual factors further include, but are not limited to, poverty, substance use, chronic diseases, trauma and adverse childhood experiences, violence history, lack of family and social support, stress, and mental illness.⁷ For instance, using stress as a risk factor, studies have shown that individuals experiencing homelessness endure higher levels of stress and distress than their housed counterparts.⁸ Structural factors, such as unemployment and the lack of affordable housing also contribute to the increased risk of homelessness. Robust correlations exist between drug and alcohol use and both the onset and persistence of homelessness. Risk factors for homelessness are multifaceted and often intersect with other identity-based vulnerabilities, including age, race, disability status, gender, and sexual identity. Research highlights racial and ethnic minorities, particularly Black and Indigenous populations, experience higher rates of homelessness as a result of systemic inequalities and racism.⁹ These risk factors frequently overlap, creating

complex patterns of disadvantage that exacerbate vulnerability to homelessness and associated health risks.

Given the multifaceted nature of homelessness, epidemiological approaches may help in identifying the most pressing risk factors, guiding the development of effective interventions. Epidemiological strategies can enhance current research by employing a more intersectional approach, which would allow for a deeper analysis of how these identity-based risk factors combine and interact to influence health outcomes among homeless populations. For example, stratifying data by race, gender, and other factors can reveal unique risk patterns that may otherwise be obscured in more generalized studies. Additionally, using epidemiological modeling to evaluate risk combinations, such as the interaction between age, sexual identity, and homelessness, can provide more tailored intervention strategies.

Study design

Many studies focusing on individuals experiencing homelessness rely on small-scale convenience samples, often conducted in larger cities. In addition, studies frequently depend on self-reported data, which introduces the risk of selection bias, particularly as homeless individuals with severe health challenges may be unable to participate, or recruitment might take place at shelters, missing the unsheltered. There is, therefore, an urgent need for more robust study designs and longitudinal study approaches to comprehensively depict the health status of this population. For example, employing longitudinal studies can track individuals' experiences with homelessness over time, providing deeper understanding into the causes and consequences of chronic homelessness. At same time, it is important to note that a critical challenge in this research space will be the difficulty of tracking individuals over time due to their mobile nature, and substantial ethical, justice and power dynamic concerns related to gathering information from people in extremely vulnerable situations.

Targeted interventions

The literature highlights several effective interventions for homelessness, such as housing first programs, smoking cessation and alcohol abstinence initiatives, and education and employment support.¹⁰ Epidemiological studies can establish the evidence base required for developing, implementing, and refining these targeted interventions. It is important to note that the effectiveness of such interventions can vary based on the local context. Therefore, a holistic, collaborative approach involving government, nonprofit organizations, and the community often yields the most successful outcomes. Another key aspect of successful homelessness interventions is the continuous evaluation and adaptation of strategies, which ensures that interventions remain responsive to evolving

challenges and the dynamic needs of this group.

Conclusion

Through an examination of the characteristics and needs of homeless persons, epidemiologists can guide the development of targeted interventions and services, and inform policies and researchers. In conclusion, the application of epidemiologic methods to homelessness research is pivotal in shaping and prioritizing targeted interventions and helping public health professionals harness data to optimize the impact of such interventions.

Authors' Contribution

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Competing Interests

The authors declare they have no conflicts of interest.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. This article does not contain any studies with human participants or animals performed by any of the authors.

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